

# Overview of Osteoarthritis & Burden of Disease

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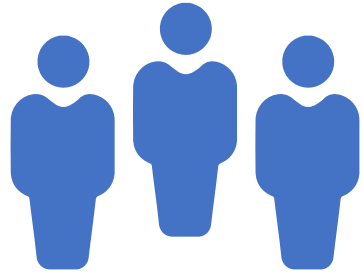
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# Disclosures

- Consultant: EMD Merck-Serono, Flexion, Novartis, Pfizer/Lilly, Regeneron
- Core Team for 2019 American College of Rheumatology – Arthritis Foundation OA Treatment Guideline
- NIH grants focused on OA, pain

# Osteoarthritis Epidemiology



528 Million



~10–15%



30%



#1



#2



#3

# Clinical Osteoarthritis

**Pain is  
Primary Clinical  
Symptom**



**People Are  
Living Longer  
with Knee OA**



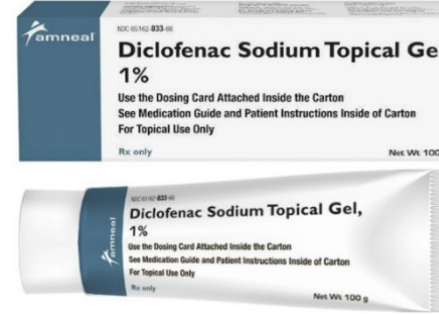
**Limited  
Management  
Options**



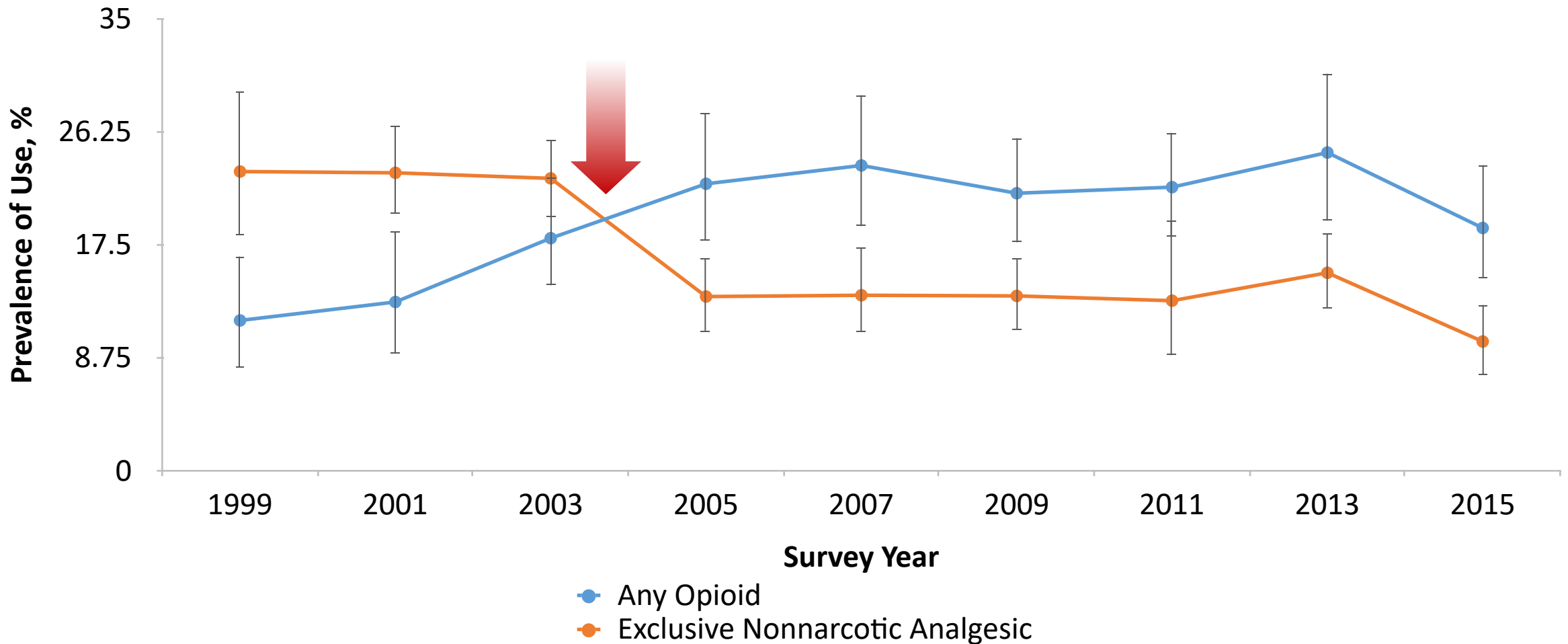
**Joint Replacement:  
“Definitive  
Treatment”**



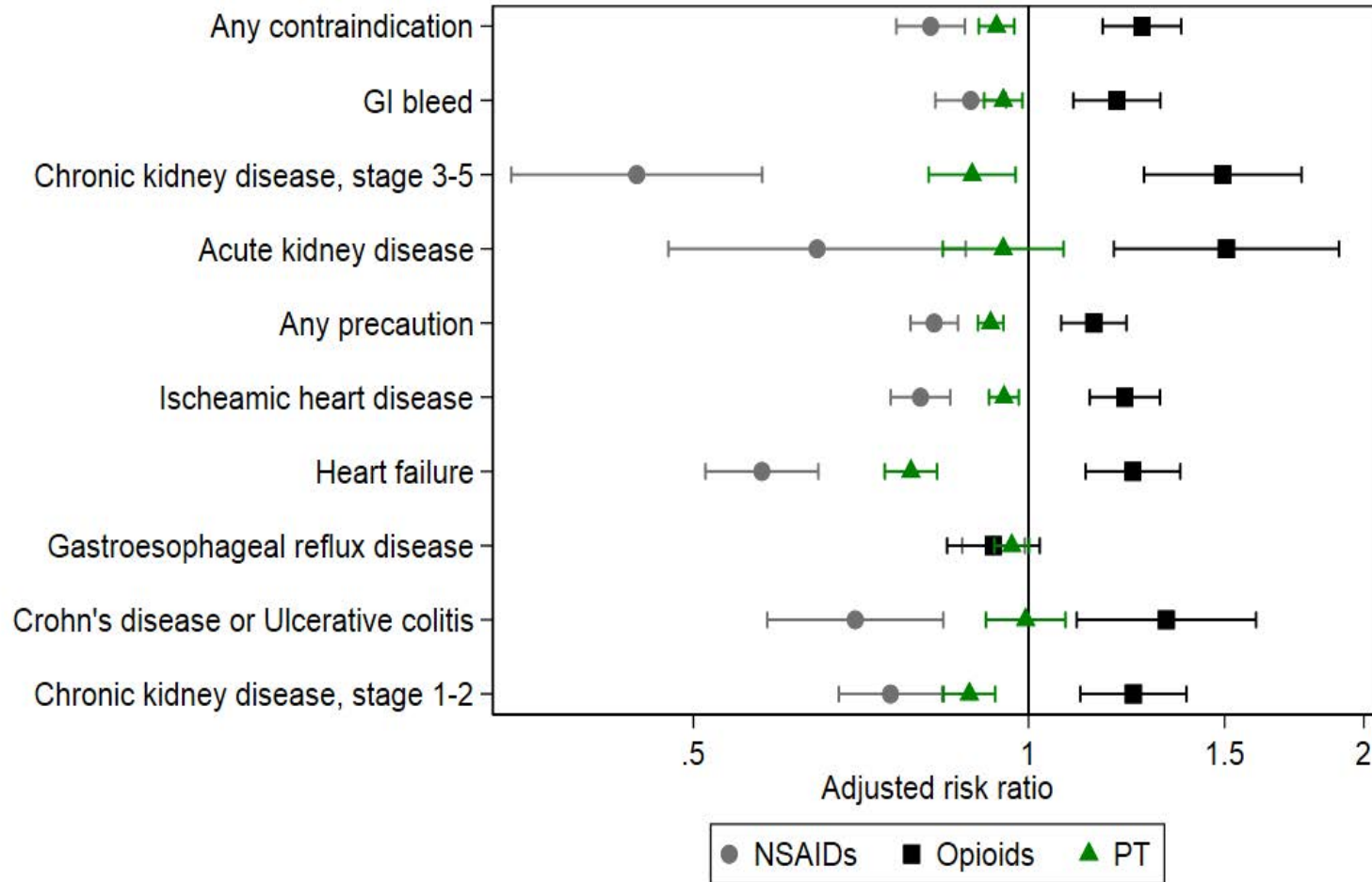
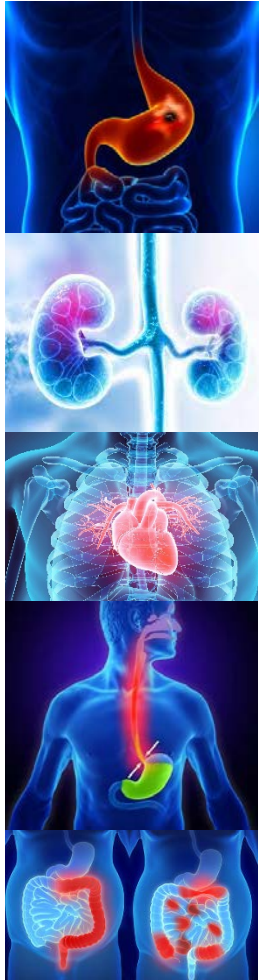
# Current OA Management Landscape



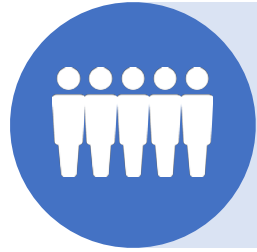
# Unintended Consequences



# Contraindications to NSAIDs in knee/hip OA → More Opioids



# Scope of the OA Problem



## Prevalence Burden

- **>500** million adults globally
- **15%** adult population



## Cost Burden

- **>\$100s** billion annually
- **>900,000** hospitalizations



## Lack of (use of) Effective Therapies

- Disability
- Quality of Life
- Opioid Epidemic

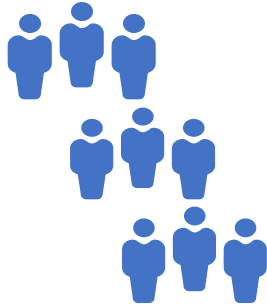
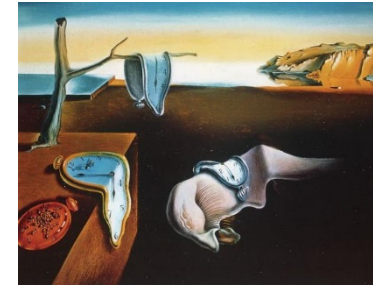


# Tremendous Unmet Need

- Need more treatment options
  - Symptoms
  - Structure modification: prevent disease progression
  - Benefit:risk balance
    - How much benefit? What risks?

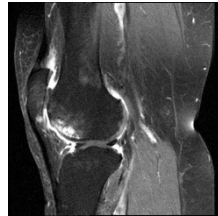
# Challenges in Developing OA Treatment Options

- Slow disease progression:
  - Surrogate endpoints?



- Trial Outcomes:

- Pain
- Structure



Clinical endpoints

Numerical rating scale											
No pain						Worst imaginable pain					
0	1	2	3	4	5	6	7	8	9	10	

Year 1 → Year 5?

;

- “Phenotype”



# Thank you

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R01 AG066010, R01 AG066914, K24 AR070892,  
R01 AR062506, P30 AR072571, U01 AG18820



Welcome to



Rheumatology